

AIR FORCE PROGRAMS

RQ/MQ-1 and MQ-9 Predator Unmanned Aerial Vehicle (UAV) System

Two Predator Unmanned Aerial Vehicle (UAV) systems are on oversight: the RQ/MQ-1 Predator and the follow-on MQ-9, which is commonly referred to as Predator B.

The RQ/MQ-1 Predator is a medium altitude UAV intended to provide reconnaissance, surveillance, and target acquisition support to a theater as well as a limited strike capability. Originally designated RQ-1, the designation was changed to MQ-1, acknowledging the system's multi-role capability after the integration of the Hellfire missile and multi-spectral targeting sensor, which includes a laser designator.

MQ-9 is intended to fly higher and faster, provide more power, and carry larger payloads than the original Predator system. It is also intended to provide a more robust airframe, using a conventional turbo-prop engine and redundant avionics. MQ-9 will be used primarily in an armed reconnaissance ("hunter-killer") role and will perform reconnaissance, surveillance, and target acquisition (RSTA) as a secondary role. The hunter-killer mission requires the system to find, identify, and kill targets. The combination of Intelligence, Surveillance, and Reconnaissance (ISR) capability and the ability to engage with on-board weapons or coordinate off-board strike assets is intended to increase the probability of detecting and successfully negating time sensitive targets. Two prototypes, designated YMQ-9, have flown, but cannot carry the size payload the Air Force is seeking. The third air vehicle delivered (also given the YMQ designation) will have an increased gross takeoff weight and increased payload capacity, more thrust, and triple redundant avionics. YMQ-9 uses a ground station common with the MQ-1.

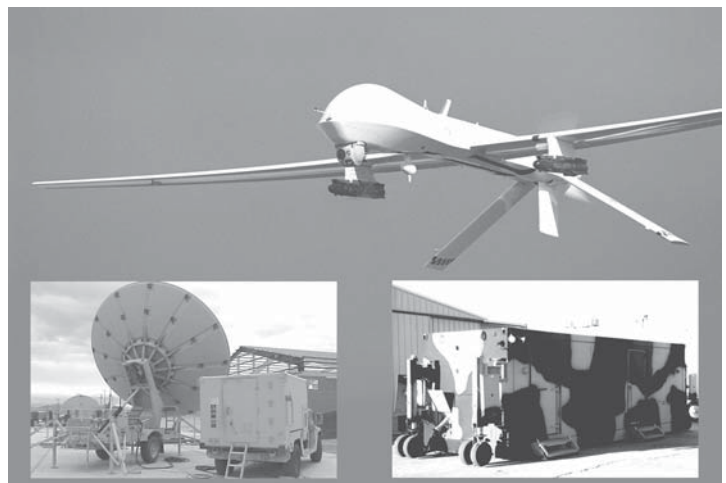
The ground station provides command and control of the air vehicle through pilot stations where the air vehicle is flown using stick and rudder control. The ground station also provides for mission planning, communications, and imagery dissemination.

The RQ-1 Predator IOT&E took place in October 2000. The system under test was the baseline ISR system. During Kosovo operations in 1999, a few Predators were equipped with a laser designator for designating targets for laser-guided weapons released by another platform. In 2001, developmental flights demonstrated the ability to launch the AGM-114 Hellfire missile from Predator. Since then, the capability has been employed operationally and funding was provided to incorporate the strike capability into production.

The planned pace of MQ-9 acquisition has slowed since 2002 when a Pathfinder designation and spiral development and fielding were considered by the Air Force. The current Air Force strategy anticipates a more deliberate acquisition with several years of System Design and Development (SDD) followed by an IOT&E in 2007 and a full-rate production decision in 2008. An MQ-9 Interim Requirements Document (IRD) was approved by ACC in May 2002. The May 2002 IRD supported the spiral development and fielding of systems with phased increases in sensor and weapons capability. A new requirements document, a Capabilities Description Document (CDD), is currently in draft.

TEST & EVALUATION ACTIVITY

Detachment 4 of the 53rd Test and Evaluation Group continues to support RQ-1/MQ-1 Block upgrades. Testing conducted in the past year includes testing of Block 20 ground station upgrades and remote split operations concept where a launch and recovery control element separate from the ground control station is used.



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The first two prototype Predator B vehicles have flown over 300 hours at altitudes up to 50,000 feet during contractor testing intended to assess basic flying qualities. Some initial integration and functionality flights of the Lynx Synthetic Aperture Radar have also taken place. First flight of the third vehicle is expected in October 2003.

TEST & EVALUATION ASSESSMENT

An Air Force High Performance Team met in 2003 to establish MQ-1 requirements. A draft Capabilities Description Document is now in coordination. An updated Test and Evaluation Master Plan is expected.

No operational testing of MQ-9 has occurred to date. Work to draft a Test and Evaluation Master Plan has begun based on the current draft requirements and acquisition strategy to support a Milestone B review in early 2004.